

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
13 January 2005 (13.01.2005)

PCT

(10) International Publication Number
WO 2005/003804 A1

(51) International Patent Classification⁷: **G01R 33/561**

(21) International Application Number:
PCT/CH2004/000387

(22) International Filing Date: 24 June 2004 (24.06.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
03015012.2 2 July 2003 (02.07.2003) EP

(71) Applicants (for all designated States except US): **UNI-
VERSITÄT ZÜRICH [CH/CH]**; Prorektorat Forschung,
Rämistrasse 71, CH-8006 Zürich (CH). **ETH ZÜRICH**
[CH/CH]; ETH Transfer, Rämistrasse 101, CH-8092
Zürich (CH).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **KOZERKE, Se-
bastian [DE/CH]**; Alte Affolternstrasse 18, CH-8908

Hedingen (CH). **TSAO, Jeffrey [CA/CH]**; Gempenstrasse
46, CH-4053 Basel (CH). **BOESIGER, Peter [CH/CH]**;
Rebbergstrasse 73, CH-5408 Ennetbaden (CH). **PRUESS-
MANN, Klaas [DE/CH]**; Hopfenstrasse 15, CH-8045
Zürich (CH).

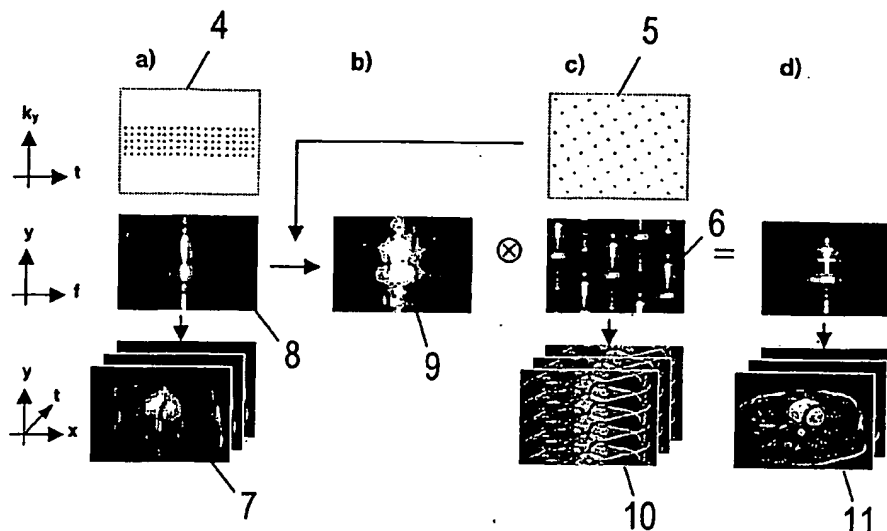
(74) Agent: **SPIERENBURG & PARTNER AG**; Mellinger-
strasse 12, CH-5443 Niederrohrdorf (CH).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,

[Continued on next page]

(54) Title: **K-T BLAST AND K-T SENSE MAGNETIC RESONANCE IMAGING**



(57) Abstract: This invention describes the combination of SSFP, a method for accelerating data acquisition, and an eddy current compensation method. This synergistic combination allows acquisition of images with high signal-to-noise ratio, high image contrast, high spatial and temporal resolutions, and good immunity against system instabilities. k-t BLAST and k-t SENSE are the preferred method for accelerating data acquisition, since they allow high acceleration factors, but other methods such as parallel imaging and reduced field-of-view imaging are also applicable. Typical applications of this invention include cine 3D cardiac imaging, and 2D real-time cardiac imaging.

WO 2005/003804 A1

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

— *with international search report*